

Appl. No. : 10/036,160
Filed : December 26, 2001

REMARKS

Upon entry of the above-shown amendments, Claims 22-29 and 32-34 are pending. In particular, Claim 30 has been cancelled without prejudice toward future prosecution. Also, Claims 22-27 have been amended as set forth above. The additions to the claims are shown by underlined text and the deletions are shown by ~~strike through text~~.

Claims 22-27 have been amended to remove reference to the extracellular domain. Also, Claims 22-26 were amended to recite isolated polypeptides having respectively 95%, 96%, 97%, 98% and 99% amino acid sequence identity. Support is found, for example, in the specification as filed on page 67 at lines 26-32 and page 73, lines 12-18. Therefore, no new matter is added by the amendments.

Applicants respond below to the remaining rejections raised by the Examiner in the final Office Action mailed September 2, 2005 and to the Advisory Action mailed on February 3, 2006. For the reasons set forth below, Applicants respectfully traverse.

Rejections under 35 U.S.C. §112, first paragraph – Written Description/New Matter

The Examiner continues to reject Claims 22-27, 30 and 33-34 under 35 U.S.C. §112, first paragraph as lacking an adequate written description. The Examiner argues that redefining the extracellular domain as amino acids 77-310 constitutes new matter.

As set forth above, Claim 30 has been cancelled and Claims 22-27 and 30 have been amended to remove reference to the “extracellular domain.” Therefore, reconsideration and withdrawal of this rejection is respectfully requested.

Rejections under 35 U.S.C. §112, first paragraph – Written Description

The Examiner also continues to reject Claims 22-27, 30 and 33-34 under 35 U.S.C. §112, first paragraph as lacking written description. The Examiner maintained that the claims fail to recite that the claimed polypeptides are isolated “human” polypeptides.

In the final Office Action the Examiner further argued that the claims are distinguishable from Example 14 of the written description training materials. In particular, the Examiner argued that, in contrast to Example 14, the claims were not limited to “at least 95% sequence identity.” The Examiner also continued to argue that the holdings in *Fiers v. Revel*, *Fiddes v.*

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Baird, Regents of the Univ. of Cal. v. Ely Lilly and Co., and *Vas-Cath* are applicable to this case. Applicants respectfully disagree.

As agreed during the interview on November 17, 2005, Applicant has amended Claims 22-26 to recite at least 95% sequence identity to several polypeptides related to SEQ ID NO:45. The polypeptide variants must also satisfy the limitation "wherein said isolated polypeptide has the ability to induce chondrocyte redifferentiation." As set forth in the Interview Summary for the November 17, 2005 interview, the Examiner agreed that the claims as amended are consistent with the written description guidelines, in particular Example 14.

In view of this, Applicants maintain that the variant claims recite sufficient distinguishing characteristics for the claimed genus of polypeptides, including polypeptides from species other than humans. Based upon the detailed description of the cloning and expression of variants of PRO4405 in the specification, the description of the assay in Example 36, the actual reduction to practice of sequences SEQ ID NOs: 44 and 45, and the functional recitation in the instant claims, Applicants submit that one of skill in the art would know that Applicants possessed the invention as claimed in the instant claims.

As suggested by Examiner Hayes during the telephone interview, Applicants assert that the pending claims are analogous to the claims discussed in Example 14 of the written description training materials. For reasons similar to those expressed in Example 14 of the training materials, the written description requirement should be deemed satisfied for the instant claims. A copy of Example 14 from the training materials is included herewith as Exhibit 1 for the convenience of the Examiner. In Example 14, the written description requirement was found to be satisfied for claims relating to polypeptides (1) having a percentage of homology (95%) to a particular sequence and (2) possessing a particular function/catalytic activity. The claims were considered fully described even though the applicant had not made any variants and even though only a single representative species was disclosed. Example 14 notes that the procedures for making variants were conventional in the art and that an assay was described in the specification which will identify other proteins having the claimed catalytic activity.

Similarly, in the instant case the pending claims recite a genus of proteins without substantial variation. As in Example 14 of the training materials, the claims (1) require a high percentage of sequence identity to the disclosed sequence of SEQ ID NO:45, and (2) require that the variant sequences have a specific functional activity, namely, the ability to induce

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chondrocyte redifferentiation. Furthermore, the specification describes how to make the claimed percentage variants of SEQ ID NO:45. For example, the specification on pages 109-111 describes "PRO Polypeptide Variants," including how to make such variants. In addition, Example 36 of the specification on page 166 discloses how to test to determine if a polypeptide has the ability to induce chondrocyte redifferentiation. Thus, like Example 14, one of skill in the art would conclude that Applicants "were in possession of the necessary common attributes possessed by members of the genus." Therefore, Applicants assert that the written description requirement of § 112 is satisfied for all of the pending claims.

Also, for the reasons set forth in the previous response dated June 23, 2005, Applicants again insist that the instant claims and facts are distinguishable from those at issue in *Fiers v. Revel*, *Fiddes v. Baird*, *Regents of the Univ. of Cal. v. Ely Lilly and Co.*, and *Vas-Cath*. None of the cited cases is closely analogous to the instant case, and particularly not as analogous as Example 14 of the training materials for Examiners. For example, none of the disputed cases sought to claim sequences based upon identity or homology to a disclosed sequence in combination with a functional limitation.

Finally, for the sake of clarity and to avoid any contrary file history estoppel, Applicants clarify that the scope of Claims 22-27, and the scope of the claims depending therefrom, is not limited to isolated "human" polypeptides as suggested by the Interview Summary accompanying the Advisory Action. Consistent with the plain language of the claims, the claims cover any isolated polypeptide, regardless of the source, as long as the polypeptide includes the recited identity and function. Applicants disagree with the statement in the Advisory Action that adding the word "human" to the claims would be redundant. Adding the word human would unnecessarily limit the scope of the claims. Applicants assert that the claims read upon isolated polypeptides, including, but not limited to, those from human sources. As a final note, Applicants submit that the finding of written description in Example 14 of the written description guidelines was not based upon the reading of any such "human" limitation into those claims or a determination that the claims were redundant with such a limitation. Therefore, Applicants respectfully submit that the claims are fully described and are not limited in their scope as suggested by the Advisory Action.

For the reasons set forth above, Applicants assert that one of ordinary skill in the art would recognize that Applicants possessed the claimed subject matter at the time of filing the

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instant application. Hence, Applicants respectfully request that the Examiner reconsider and withdraw the written description rejection under 35 U.S.C. §112.

Conclusion

The present application is believed to be in condition for allowance, and an early action to that effect is respectfully solicited. Applicants invite the Examiner to call the undersigned if any issues may be resolved through a telephonic conversation.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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